

Claims

1. A method to reduce piling on blankets and printing plates in lithographic printing processes comprising an effective amount of a polyethylene oxide polymer dissolved in an essentially aqueous fountain solution.
2. The polymer as described in Claim 1 wherein the molecular weight ranges from about 200,000 to about 7,000,000.
3. The polymer as described in Claim 1 wherein the effective amount can range from about 5 ppm to about 500 ppm.
4. The polymer as described in Claim 1 useful in an acid fountain solution with a ph range of about 3.2 to about 5.5.
5. The polymer as described in Claim 1 useful it in neutral fountain solutions with a ph range of about 6.5 to about 7.5.
6. An acid fountain solution comprising:
 - a. water with a ph of about 3.2 to about 5.5;
 - b. a polyethylene oxide water soluble polymer, which functions as an effective anti-piling agent;
 - c. an inorganic and/or organic salt-acid buffering system;
 - d. a chelating agent
 - e. a biocidal system
 - f. a desensitizing water soluble polymer
 - g. glycols, glycol ethers, glycol esters, or combinations thereof;
 - h. a nonionic, anionic or combination thereof surfactant system to provide a HLB value of about 2 to about 10;
 - i. a hydrotape
 - j. a corrosion inhibitor;

7. An neutral fountain solution comprising
 - a. water with a ph in the range of about 6.5 to about 7.5
 - b. a polyethylene oxide water soluble polymer, which functions as an effective anti-piling agent;
 - c. an inorganic and/or organic salt – acid buffering system;
 - d. an ethyleneoxide or propyleneoxide glycol, glycol ether, or glycol ester solvent, or a combination thereof;
 - e. a hydrotrope;
 - f. a surfactant;
 - g. a glycol, glycol ether, glycol esters, or combinations thereof;
 - h. optionally a corrosion inhibitor
8. The acid fountain solution as described in Claim 6 wherein the antipiling polymer has a molecular weight range of about 200,000 to about 7,000,000.
9. The acid fountain solution as described in Claim 6 wherein the antipiling polymer concentration is from about 5 to about 500ppm.
10. The neutral fountain solution as described in Claim 7 wherein the antipiling polymer has a molecular weight range of about 200,000 to about 7,000,000.
11. The neutral fountain solution as described in Claim 7 wherein the antipiling polymer concentration is from about 5 to about 500ppm.
12. The acid fountain solution as described in Claim 6 wherein the inorganic and/or the organic acid-salt buffering system is present in the amount of about 0.20 to about 2.50 weight percent.
13. The acid fountain solution as described in Claim 6 wherein the chelating agent is present in the amount of about 0.10 to about 1.5 weight percent.

14. The acid fountain solution as described in Claim 6 wherein the biocide is present the amount of about 0.10 to about 1.25 weight percent.
15. The acid fountain solution as described in Claim 6 wherein the desensitizing water soluble polymer is present in the amount of about 0.50 to about 5.0 weight percent.
16. The acid fountain solution as described in Claim 6 wherein the glycol, glycol ethers, or glycol esters, is present in the amount of about 1.50 to about 10.0 weight percent.
17. The acid fountain solution as described in Claim 6 wherein the surfactant – wetting agent is present in the amount of about 0.50 to about 4.50 weight percent.
18. The acid fountain solution as described in Claim 6 wherein the hydrotrope is present in the amount of about 1.0 to about 5.0 weight percent.
19. The neutral fountain solution as described in Claim 7 wherein the inorganic and/or organic acid-salt buffering system is present in the amount of about 5.0 to about 10.0 weight percent.
20. The neutral fountain solution as described in Claim 7 wherein the glycol, glycol ether, glycol esters or combinations thereof are present in the amount of about 1.0 to about 10.0 weight percent.
21. The neutral fountain solution as described in Claim 7 wherein the hydrotrope is present in the amount of about 0.5 to about 2.0 weight percent.
22. The neutral fountain solution as described in Claim 7 wherein the surfactant is present in the amount of about 0.5 to about 2.0 weight percent.